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# AI Report

For our final project, we have chosen to develop a 2D endless runner platformer game, akin to popular titles such as Geometry Dash and the Dinosaur Game. As for the artificial intelligence implementation, we have opted to employ the reinforcement learning technique.

The central feature of our game is an AI agent that controls the gameplay, while the player more or less assumes the role of an observer. The agent, always moving towards the right side of the screen, must navigate a variety of obstacles that spawn from that direction. The agent employs its decision-making capabilities to determine whether to jump or stay grounded in order to dodge the obstacles. Notably, we have designed the game to allow the player to choose where obstacles spawn, which provides them with the opportunity to attempt to outsmart and defeat the AI or to just try and make the AI do something the player might find funny.

We think our game is interesting because it offers a unique opportunity to observe the behavior of an AI agent attempting to survive in an endless runner game. Due to its nature as an AI, the agent behaves differently from a human player, and analyzing its actions and motivations adds an intriguing dimension to the gameplay. There is an element of amusement that arises from the AI's sometimes quirky behavior, such as when it actively jumps into a block that could have been avoided by staying grounded, as it believes it is better to die in the air rather than on the ground (which is partly due to the nature of how we trained it). Of course the feature that allows the player to choose where obstacles spawn can also allow the player to create their own scenarios where an AI might do something they find funny or interesting as well.

In terms of graphics, that has been implemented in the background and obstacles. Animation is present in the Agent character which simply has the Agent continuously running to the right. Lastly, sound effects are triggered when the Agent jumps, or collides and dies to an obstacle, and there is also background music present to accompany the gameplay.